AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims:

Claim 1 (Currently amended): A base station including a transmitter, ~~filter arrangement for use in a wireless communication transmitter, the arrangement~~ the transmitter comprising:

means for receiving independent digital signals ('I', 'Q') to be transmitted;

a digital-to-analog converter (DAC) configured to independently convert ~~DAC means for converting~~ the digital signals to analog signals;

an up-convertor to up-convert the analog signals to a single radio frequency signal; and

an analog ~~analogue~~ channel filter configured to filter ~~means for filtering~~ the up-converted analog signals[[; and]] , wherein the base station is characterized by:

a digital pre-equaliser filter ~~means~~ coupled before the DAC ~~means~~ , and configured to filter ~~for filtering~~ the digital signals, wherein the digital pre-equaliser filter comprises a first digital filter and a second digital filter configured to apply complex coefficients to the received digital signals to provide asymmetric equalisation of the received digital signals. ~~means being adapted to substantially correct for non-ideality in the analogue channel filter means.~~

Claim 2 (Currently amended): The base station ~~filter arrangement~~ of claim 1 wherein the first digital filter is constructed to provide a time reversed version of an impulse response of the analog channel filter to correct ~~the pre-equaliser digital filter means comprises:~~

~~means for substantially correcting~~ for non-linear phase response in the analog ~~analogue~~ channel filter ~~means; and~~

~~means for substantially correcting for amplitude error response in the analogue channel filter means~~.

Claim 3 (Currently amended): The filter arrangement of claim 1 ~~or 2~~ wherein the second ~~pre-equaliser~~ digital filter is configured to correct for an amplitude response from the analog channel ~~means comprises a finite impulse response (FIR)~~ filter.

Claim 4 (Currently amended): The base station ~~filter arrangement~~ of claim 1~~, 2 or 3 wherein the analogue channel filter means comprises a narrow band RF filter.~~ wherein the digital pre-equaliser filter applies larger values of the complex coefficients to a real version of the received digital signal as compared to an imaginary version of the received signals.

Claim 5 (Currently amended): The base station ~~filter arrangement~~ of ~~any preceding~~ claim 1, wherein the base station is a Node B configured to operate in a TDD wireless communication system. ~~further comprising up-converter means coupled between the DAC converter means and the analogue channel filter means for providing upward frequency translation.~~

Claim 6 (Currently amended): The base station ~~filter arrangement~~ of ~~any preceding~~ claim 1, wherein the digital pre-equaliser filter ~~means is adapted~~ is configured to adjust to a desired value the centre frequency of the analog ~~analogue~~ channel filter ~~means~~.

Claim 7 (Currently amended): The base station of claim 1, ~~filter arrangement of any preceding claim~~ wherein the digital pre-equaliser filter ~~means~~ is programmable.

Claim 8 (Currently amended): The base station of claim 1, ~~filter arrangement of any preceding claim~~ wherein the ~~digital pre-equaliser filter means has~~ complex coefficients ~~to~~ provide asymmetric equalisation.

Claim 9 (Currently amended): The base station ~~filter arrangement~~ of claim 8 wherein the largest of the filter coefficients are real.

Claim 10 (Currently amended): The base station of claim 1, ~~filter arrangement of any preceding claim~~ wherein the analog ~~analogue~~ channel filter ~~means~~ has roll-off in the pass-band of the desired signal to achieve a specified stop-band attenuation.

Claims 11-14 (Cancelled)

Claim 15 (Currently amended): A method for filtering in a wireless communication transmitter, the method comprising:

receiving independent digital signals ('I', 'Q') to be transmitted;

converting the independent digital signals to analog signals;

un-converting the analog signals to a single radio frequency; and

filtering the up-converted analog signal, wherein the method is characterized by:

digital pre-equaliser filtering, with a digital pre-equalisation filter, the digital signals, by applying independent complex coefficients to the received digital signals to provide asymmetric equalisation of the received independent digital signals, wherein the digital pre-equalisation filter comprises a first digital filter and a second digital filter configured to apply complex coefficients to the received digital signals.

~~providing DAC means converting the digital signals to analog signals;~~

~~providing analogue channel filter means filtering the analog signals; and~~

~~providing digital pre-equaliser filter means coupled before the DAC means to filter the digital signals, the digital pre-equaliser filter means substantially correcting for non-ideality in the analogue channel filter means.~~

Claim 16 (Currently amended): The method of claim 15 wherein the pre-equaliser digital filtering comprises providing a time reversed version of an impulse response of the analog channel filter to correct for non-linear phase response in the analog channel filter. ~~pre-equaliser digital filter means:~~

~~substantially corrects for non-linear phase response in the analogue channel filter means; and~~

~~substantially corrects for amplitude error response in the analogue channel filter means.~~

Claim 17 (Currently amended): The method of claim 15 ~~or 16~~ wherein the pre-equaliser digital filtering comprises constructing a digital filter to correct for an amplitude response from the analog channel filter. ~~filter means comprises a finite impulse response (FIR) filter.~~

Claim 18 (Currently amended): The method of claim 15, ~~16 or 17~~ wherein the digital pre-equaliser filtering comprises applying larger values of the complex coefficients to a real version of the received digital signal as compared to an imaginary version of the received signals. ~~analogue channel filter means comprises a narrow band RF filter.~~

Claim 19 (Currently amended): The method of claim 15, wherein the method is performed in a Node B in a UMTS wireless communication system. ~~any one of claims 15-18 further comprising providing up-converter means coupled between the DAC converter means and the analogue channel filter means to provide upward frequency translation.~~

Claims 20-30 (Cancelled)